Fireside Chimney Supply, Inc. #MH25531

INSTALLATION INSTRUCTIONS FOR FIREFLEX MODEL CB STAINLESS STEEL CHIMNEY LINERS

This lining systems is designed and listed to be installed within masonry chimneys used to vent the products of combustion produced by heating appliances that burn oil, gas, or solid fuels.

This liner should be installed by a certified chimney sweep or other qualified chimney professional.

Each installation must be planned for the best performance of the appliance being installed. Refer to appliance manufacturer's instructions to determine any special venting requirements for specific appliance.

The installer must contact the local building and fire code officials to determine any installation and inspection requirements. Building permits may be required before installation. FireFlex and AL liner must be installed within the local building codes. Please remember, regardless of national codes, the local building inspectors have ultimate jurisdiction.

Do not use any materials or components other than specified in these installation instructions.

MATERIALS NEEDED TO INSTALL FIREFLEX STAINLESS STEEL LINER:

Flexible Basic Insert Kit	**Flexible Tee Kit**	**Rigid Liner**
Flexible S.S. Liner	**Flexible S.S. Liner**	**Rigid S.S. Liner Sections**
Appliance Connector	**Tee Connector W/Cap**	**Two Part Tee**
Top Plate	**Top Plate**	**Top Plate**
Rain Cap	**Rain Cap**	**Support Clamp**
		Storm Collar
		Rain Cap

INSULATION MATERIALS (if applicable)

Part #	**Description**
PW4	**Premier Wrap 1/4" Foil Faced Ceramic Wool Blanket**
PW2	**Premier Wrap 1/2" Foil Faced Ceramic Wool Blanket**
PM	**Premier Mesh Protective Wire Mesh Sleeve**
Foil	**Aluminum Foil Tape**
FA1540 (large/small)	**Mesh Clamp (2 or 3 depending on liner length)**
PRMIX	**Premier Mix (used in place of Premier Wrap)**

1.) INSPECTION AND PREPARATION OF CHIMNEY

The existing chimney must meet the following codes for proper construction and compliance requirements before the liner can be installed:

* The chimney must be a minimum of ten feet high, and a maximum of one hundred feet in height.

* The chimney must have the proper wall thickness, ie: minimum of 4 inches (nominal) solid masonry units.
* The chimney must extend at least three feet above the highest point where it penetrates the roof structure, and at least two feet higher than any portion of the building or adjoining structures within ten feet.
* If the chimney is constructed inside the structure, a minimum of two inches of unobstructed air space must surround the chimney to any combustible material. If the chimney is constructed on the outside of the structure, one inch of unobstructed air space must be maintained between the chimney and all other combustible materials.
*When the chimney passes through a floor, ceiling, or other horizontal or vertical structure, fire stops of a non-combustible material must be used.

****IF THE PROPER CLEARANCES LISTED ABOVE CANNOT BE DETERMINED THE LINER MUST BE INSTALLED WITH A *UL LISTED* CHIMNEY INSULATION****

* Do not connect any appliance that burns a liquid fuel to a chimney liner used to vent a solid fuel burning appliance.
* The connector pipe used to connect the appliance to the chimney liner must meet proper clearances to combustibles as determined by the appliance manufacturer's installation instructions, the national building code, or the local building code, whichever is in force.
* Before the liner is installed the chimney must be cleaned thoroughly to remove all deposits of soot, creosote, or glazed creosote. A proper inspection must be done to determine that the chimney is structurally sound. If the structural integrity of the chimney is found to be in question, ie: missing, loose, or cracked masonry or mortar joints, repairs must be made before installation of the chimney liner.

2.) SIZING THE PROPER LINER DIAMETER

* For solid fuel burning appliances, the cross sectional area of the liner shall not be less than the cross sectional area of the appliance outlet collar. The cross sectional area of the flue shall not be more than three times the cross sectional area of the appliance outlet collar. For solid fuel burning fireplaces, the liner should be at least one-tenth the square inches of the square inches of the fireplace opening. **Please note that this formula can vary based on height of the chimney and other determining factors. Call Fireside Chimney Supply, Inc. should you have any questions.**
* For liner sizing of gas and oil burning appliances please refer to N.F.P.A.54 for gas and N.F.P.A.31 for oil. Also refer to appliance manufacturer's instructions. **Incorrectly sized liners for these appliances can lead to performance problems and condensation with the lining system.**
Please call Fireside Chimney Supply, Inc. should you have any questions.

CREOSOTE-FORMATION AND NEED FOR REMOVAL

When wood is burned slowly, it produces tar and other vapors, which combine with expelled moisture to form creosote. The creosote vapors may condense on the inside of the chimney liner during slow-burning firing periods. As a result, creosote residue accumulates on the chimney liner. When ignited, this creosote makes an extremely hot fire.
* To properly inspect the liner system it is necessary to gain access to the top and/or bottom of the chimney. To inspect the liner from the bottom remove the connector pipe from the appliance and the chimney. Using a flashlight and a mirror look in and up the liner to visually inspect for soot and creosote formation. Note: if the chimney has offsets you may not be able to see all the way to the top or to the bottom depending on your inspection location. In this case it will be necessary to inspect the liner from both the bottom and the top of the chimney.
* After inspection, if cleaning is required, use a plastic bristle brush the same size as the interior of the liner. Either push the brush up from the bottom or down from the top using the appropriate number of extension pole for the height of the chimney. When cleaning from the top remove the liner cap before inserting brush in the top of the liner.

3.) DETERMINE IF THE CORRECT SIZE LINERWILL FIT INTO THE CHIMNEY

* The FireFlex Stainless Steel Chimney Liner can be installed within the existing flue tile or the flue tile can be removed. It is extremely important that the correct size liner will fit into the chimney. Certain factors, such as chimney construction and offsets in the chimney, may change the size of the interior of the chimney. It is best to prove the interior of the chimney before trying to install the chimney liner. This can be done by lowering a short piece of the intended size liner down the chimney to see if it will pass all the way to the bottom. You can also use a liner guide cone to accomplish this. If the chimney liner will need to be insulated this will affect the required dimensions needed to install the liner. If the round configurations needed to vent the appliance will not fit the liner may be formed to an oval configuration to fit, however
ovalizing the liner will change the cross sectional area. **Please call Fireside Chimney Supply, Inc. with any questions.**

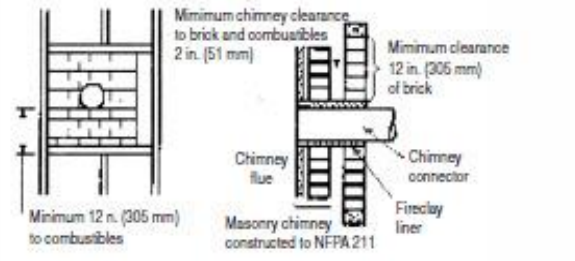
4.) INSTALLING FIREFLEX STAINLESS STEEL CHIMNEY LINER

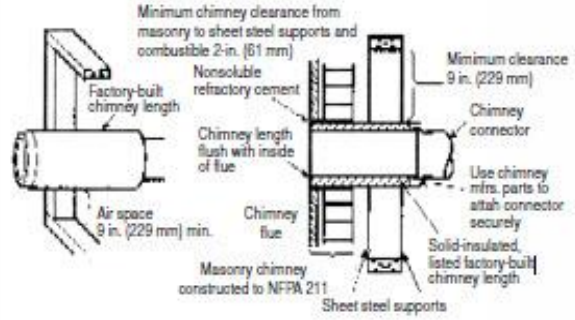
* Make sure the thimbles to be used in the installation are in the proper chimney to maintain the required clearance to combustibles for the connector pipe from the appliance. If the clearances are not correct reconstruct the thimble to the proper position.
* Determine the length of the liner by measuring from the bottom most thimbles to the top of the chimney. To this measurement add approx. six inches to accommodate the crown and top hardware. Cut liner to length.
* Remove the snout from the two part tee and attach the tee body to liner with either stainless steel pop rivets, or stainless steel screws. If the liner is going to be insulated with a ceramic wool blanket, install the blanket now. If a tee cap is going to be used, attach it to the body now.
* Take the tee snout that was removed from the tee body and extend the draw band completely, slide the tee snout into the thimble with the draw band centered in the flue. Lower the liner down from the top of the chimney, and feed the tee body through the draw band on the tee snout. You may have to rotate the liner to align the hole in the tee body with the snout. Once you have aligned the tee, tighten the draw band to secure the snout to the tee body.
* Seal the area around the tee snout with mortar to form an airtight seal.
* At the top of the chimney there are 2 Options to seal and support the liner:
Option 1 is to install a top kit. This is accomplished by first removing the rain cap portion of the kit by loosening the top worm drive clamp a few turns.
Next, install the plate assembly over the liner, tighten the worm drive screw until snug, then attach the plate to the masonry with silicone or tap cons. Cut the liner flush with the top of the assembly and reinstall the rain cap portion of the top kit.
Option 2 is to install a top plate, top support clamp, and storm collar. Place the hole in the top plate around the liner and center the liner and top place on top of the chimney, secure to chimney
top with masonry screws, silicone or mortar. Attach the support clamp around liner and secure. Place a bead of silicone around top of storm collar to seal. Install rain cap on top of liner and secure.
* To facilitate inspection and cleaning, wall penetrations shall not be placed directly behind the heating appliance.

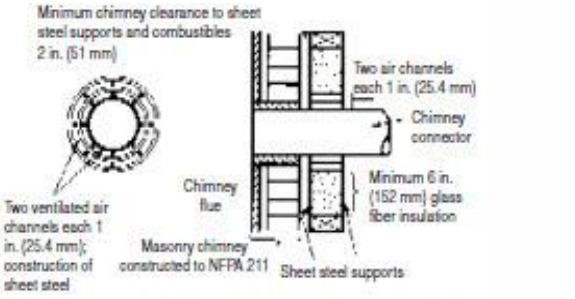
5.) INSTALLING FIREFLEX STAINLESS STEEL LINER FOR A FIREPLACE

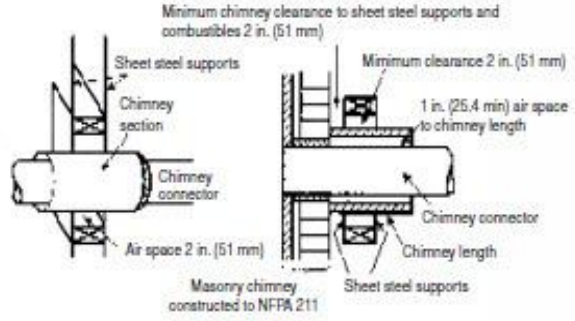
* When installing a liner for a fireplace application no tee is used on the bottom of the liner. Instead a base plate is used to seal the liner at the top of the smoke chamber. The base place can be installed by working up through the damper opening or by removing bricks in the face of the fireplace at the level of the top of the smoke chamber.
* Installing the base place from the damper opening is accomplished by sliding the liner down into the smoke chamber from the top of the chimney. Put the base plate up through the damper opening and around the bottom of the liner. Secure the base plate to the liner with stainless steel rivets, stainless steel screws, or a support clamp below the base plate. Once base plate is secured pull liner up and seat base plate on top of smoke chamber. At this point hold liner in place by pushing 2x4 tee up through damper and across bottom of liner. Install top hardware at top of chimney as described in previous section.

* To install the base plate through the face of the fireplace will require more work and masonry skill. Start by removing two to four bricks in either the face or the back of the fireplace at the level of the top of the smoke chamber. If the smoke chamber is constructed correctly there should be approx. eight inches of masonry to go through. Once this opening has been accomplished slide the base plate into the hole over the top of smoke chamber. Slide the liner down from the top of the chimney and through the hole in the base plate. Secure with stainless steel rivets, stainless steel screws, or place a support clamp on the liner above the base plate. This will keep the liner from sliding down through the base plate until the top hardware









System

A Minimum 3.5 in. (90 mm) thick brick masonry wall framed info combustible wall with a minimum of 12 in. (305 mm) brick separation from clay liner to combustibles. Fireclay liner (ASTM C 315. Standard Specification for Clay Fire Linings, or equivalent), minimum 5/8 (16 mm) wall thickness, shall run from outer surface of brick wall to, but not beyond the inner surface of chimney flue liner and shall be firmly cemented in place.

Clearance: 12 in. (305 mm)

B Solid-insulated, listed factory-built chimney length of the same inside diameter as the chimney connector and having 1 in. (25.4 mm) or more of insulation with a minimum 9 in. (229 mm) air space between the outer wall of the chimney length and combustibles.

The inner end of the chimney length shall be flush with the inside of the masonry chimney flue and shall be sealed to the flue and to the brick masonry penetration with non-water-soluble refractory cement. Supports shall be securely fastened to wall surfaces on all sides.

Fasteners between supports and the chimney length shall not penetrate the chimney liner.

Clearance: 9 in. (229 mm)

C Sheet steel chimney connector, minimum 24 gauge [0.024 in. (0.61 mm)] in thickness, with a ventilated thimble, minimum 24 gauge [0.024 in. (0.61 mm)] in thickness, having two 1 in. (25.4 mm) air channels, separated from combustibles by a minimum of 6 in. (152 mm) of glass fiber insulation. Opening shall be covered, and thimble supported with a sheet steel support, minimum 24 gauge [0.024 in (0.61 mm)] in thickness.

Supports shall be securely fastened to wall surfaces on all sides and shall be sized to fit and hold chimney section. Fasteners used to secure chimney section shall not penetrate chimney flue liner.

Clearance 5 in. (152 mm)

D Solid-insulated, listed factory-built chimney length with an inside diameter 2 in. (51 mm) larger than the chimney connector and having 1 in. (25.4 mm) or more of insulation, serving as a pass-through for a single wall sheet steel chimney connector of minimum 24 gauge [0.024 in. (0.61 mm)] thickness, with a minimum 2 in. (51 mm) air space between the outer wall of chimney section and combustibles)

Minimum length of chimney section shall be 12 in. (305 mm). Chimney section concentric with and spaced 1 in. (25.4 mm) away from connector by means of sheet steel support plates on both ends of chimney section. Opening shall be covered, and chimney section supported on both sides with sheet steel supports of minimum 24 gauge [0.024 in. (0.61 mm)] thickness.

Supports shall be securely fastened to wall surfaces on all sides and shall be sized to fit and hold chimney section. Fasteners used to secure chimney section shall not penetrate chimney flue liner.

Clearance: 2 in. (51 mm)

Additional requirements:

1. Insulation material used as part of wall pass-through system shall be of noncombustible material and shall have a thermal conductivity of 1.0 Btu-in./hr-ft^2 - °F (4.88 kg-cal/hr-m^2-°C) or less.
2. All clearances and thicknesses are minimums; larger clearances and thicknesses shall be permitted.
3. Any material used to close up an opening for the connector shall be of noncombustible material.
4. A connector to a masonry chimney, except for System B, shall extend in one continuous piece through the wall pass-through system and the chimney wall to the inner face of the flue liner, but not beyond.

6.) INSULATING FIREFLEX STAINLESS STEEL CHIMNEY LINER

A note about insulating stainless steel chimney liners: Not all situations require insulation of the chimney liner. The UL1777 Standard for installing stainless steel chimney liners requires insulation because the non-code conforming chimney has zero clearance to combustibles or some other defect. Thus the UL1777 Standard is in place for fire protection. The definition of a code Conforming chimney is one that meets or exceeds N.F.P.A.211 for construction of chimneys, ie: proper clearances to combustibles, intact 5/8 fireclay flue liner or equivalent, minimum four inch (nominal) solid chimney wall. If the chimney meets the requirement for code conforming the only reason to reline would be for appliance performance. In case of relining for high efficiency gas or oil fired appliances (over 83%) no insulation may be required. However, regardless of existing chimney, insulating the chimney liner will improve the performance of the appliance that is connected to it. Because the insulated liner will stay warmer the flue will not cool as quickly and will not condense as rapidly. In wood burning appliances this will reduce the amount of creosote that will form in the liner. In oil and gas burning applications the likelihood of condensation, especially on startup of the appliance will greatly reduce. While fire protection is the main concern, insulating liners even if not required will pay dividends by increasing performance and efficiency.

* **Please Note:** For the installed liner system to meet UL standards, all UL listed components used must be installed with proper clearances.

THERE ARE TWO METHODS OF INSULATING FIREFLEX STAINLESS STEEL LINERS

Method #1 - Insulating with Premier Mix

* Premier Mix is poured into the chimney around the liner after the liner is installed. Premier Mix is premixed and water is added to the mix at the job site. To determine the amount of Premier Mix needed to insulate a specific liner please **call Fireside Chimney Supply, Inc..** * No minimum thickness of Premier Mix around a liner installed in a **code-conforming** chimney is required. The required clearance between the liner and the interior of the masonry chimney is 1” inches. In a **non-code conforming** chimney, ie: zero clearance to combustibles, no flue liner, etc. the minimum recommended thickness of Premier Mix is One inch. The required clearance between the insulation and the interior wall of the masonry chimney is 0” inches.
* Premier Mix is mixed with two to three gallons of water in a mortar pan or wheelbarrow. When mixed correctly the Premier Mix will have a grainy consistency and little or no water will come out when squeezed in your hand. Once mixed the Premier Mix is poured into the chimney around the liner. The liner should be vibrated during the pouring process to help the Premier Mix settle around the liner. Continue to pour Premier Mix until the chimney is full to the top. Install top hardware as described in previous section.
*A Premier Mix insulated FireFlex liner can be used after the installation is complete. Curing of the mix will occur over approximately 28 days, with approximately 70% of the curing process occurring in the first week. Drying time of the Premier Mix will depend on the thickness of the mix and the absorption of the masonry chimney. Drying time will be accelerated by using the heating appliance.

Method #2 - Insulating with Premier Wrap

Premier Wrap is installed around the liner **before** it is installed in the chimney.
* Premier Wrap is one half inch thick and one quarter inch thick, eight pound density, ceramic wool blanket with a three mil aluminum foil face. Aluminum tape, retractable wire mesh, and mesh clamps will be needed to complete the installation. Premier Wrap is available in four widths, 24” to fit liners 4” to 6” diameters, 30” to fit 7” to 8” diameters, 36” to fit 9” to 10” diameters, and 48” to fit 11” to 14” diameters.
* In a **code-conforming** chimney no Premier Wrap insulation is required. In a **code-conforming** chimney that must have the tiles removed a single one quarter inch Premier Wrap is required. In a **non-code conforming** chimney a single one-half inch Premier Wrap is required. The required clearance between the insulation and the interior of the masonry chimney is 0” inches.
* To install Premier Wrap onto the liner, lay the blanket open with the foil side down. Cut blanket length wise so that it will overlap approx. one inch. Place liner on blanket and wrap around liner. Run foil tape

the complete length of the seam on the blanket, next cut pieces of foil tape approx. eight inches long, and tape across seam about every foot. Next place liner into retractable mesh sock. Using mesh clamp, clamp at end of liner just above tee body. Pull retractable mesh sock to top of liner, continue to pull until mesh sock has retracted tightly around the liner, clamp mesh at top and cut off excess mesh. Install liner as described in previous section.

7.) INSPECTION AND MAINTENANCE INSTRUCTIONS

Should you have any questions concerning inspection and maintenance of the FireFlex liner
Please contact:

Fireside Chimney Supply, Inc.
Corporate Headquarters
926 Westbrook Dr
South Lyon, Mi 48178
(877) 486-8119

* Inspection of the FireFlex liner should be done in a minimum, once per year, at no more than 12 month intervals from date of installation. If
the liner is used to vent a solid fuel burning appliance, inspections should be done at intervals of every 2 months during the heating season.
Upon inspection, if soot or creosote accumulations have reached a 1/4" or more the liner should be cleaned. This inspection and cleaning should
be carried out by a Nationaly certified chimney sweep, or other qualified chimney professionals.

8.) OPERATION

* FOR FireFlex liners, insulated with Premier Mix, used to vent a solid fuel burning appliance please note: Solid fuel burning stoves can be used immediately after the installation is complete. However the flue gas temperatures entering the liner should not exceed 500 degrees F. for a period of three weeks. A connector pipe flue gas thermometer will help monitor this procedure. Fireplaces can also be used immediately after the installation is completed. A small to moderate fire should be maintained for a period of approximately three hours. After this time a normal fire can be established.
It is important that the operator not over fire the appliance during these initial periods.

PRODUCT INFORMATION: FireFlex 316L

FireFlex 316L Stainless Steel Flexible Chimney liner is designed to reline existing chimneys or used as a liner in new construction. Manufactured in the highest quality, mill certified, 316L grade alloy FireFlex Stainless Steel Flexible Chimney Liner has a high acid fighting capability. Listed by UL Laboratories to UL 1777 standard for zero clearance installation. FireFlex can be used to vent wood, wood pellet, coal, non-condensing gas and oil, making it the choice for venting all standard efficiency installations. FireFlex is available in 3" to 30" diameter to cover a wide range of requirements found in the field today.

The unique manufacturing systems used to make FireFlex utilizes a continuous strip to stainless steel, interlocked and diagonally crimped to produce a gas and water tight lining system of superior strength and durability. FireFlex can be bent to negotiated offsets in chimneys and can be ovalized to custom sizes to fit most any installation. The corrugated construction allows for expansion and construction during the heat up and cool down periods, removing any stress on the system.

FireFlex can be insulated with either a PremierMix or Thermal poured insulation or with a foil faced ceramic wool blanket to meet UL 1777 standards for chimney exteriors with zero clearance to combustibles.

FireFlex can be shipped UPS in the following lengths 3"-50', 4"-44', 5"-38', 6"-32', 7"-26', 8"-20'.
All other diameters and lengths exceeding those above must be shipped road freight.
FireFlex Stainless Steel Flexible Chimney Liner carries a Life Time Warrantee for all fuels, with

appliance efficiencies at 83 percent or lower.